

REMARKS

Claims 1-13 are pending. Claims 9-12 were previously withdrawn due to a restriction requirement. Claim 1 is currently amended. Claim 2 is canceled. Claim 13 is new.

Claims 1-5, 7 and 8 were rejected under 35 U.S.C. § 102(b) as anticipated by Huang (U.S. Patent 6,359,341). Independent claim 1 is currently amended to incorporate features of now canceled claim 2.

In view of the foregoing amendment and the following remarks, applicant respectfully requests reconsideration of claims 1-5, 7 and 8.

Claim 1 recites a circuit device comprising 1) an insulating resin that covers a circuit element mounted to a conductive pattern and 2) a shielding layer provided on the main surface of the insulating resin. Claim 1 is currently amended to recite the circuit device further comprises a through hole penetrating the insulating resin in a thickness direction and a “connecting means formed inside the through hole” for electrically connecting the conductive pattern to the shielding layer. An example is illustrated in FIGS. 1A and 1B, which show an insulating resin 13 that covers both circuit element 12 and a conductive pattern 11A to which the circuit element 12 is mounted. A shielding layer 14 is located on the surface of the insulating resin 13 and is connected to the conductive pattern 11A via a connecting means 15 formed inside the through hole 20.

The Huang patent discloses an integrated circuit package comprising a semiconductor chip 33 that is mounted to conductive traces 301. The circuit package includes an encapsulate 35 (*see* FIG. 3) that covers both the semiconductor chip 33 and conductive traces 301. A ground metallic layer 32 for shielding electromagnetic radiation is electrically connected to skirt portion 71 of heat spreader 7 which is located above a region of encapsulate 35.

The Office action alleges that the area where skirt portion 71 is formed (FIG. 3) corresponds to a via or a through hole as recited in pending claim 1 (page 2 of Office action). Applicant respectfully disagrees. This area is neither a via nor a through hole. The encapsulate 35 is formed *after* the heat spreader 7 and skirt portion 71 are formed and, as a result, no via or

through hole is formed in the encapsulate 35. Specifically, Huang discloses that molding resin is injected into holes 711 in the skirt portion 71 and fills the entire area underneath the skirt portion 71 and heat spreader 7 so as to provide "an anchoring effect that can help secure the heat spreader more fixedly...in the encapsulate" (Huang, col. 6, lines 56-62). Therefore, since the encapsulate 35 does not include a via or through hole, the skirt portion 71 cannot be "formed inside" a through hole.

A through hole is, in fact, disclosed in the Huang patent. As mentioned above, through holes 711 formed in skirt portion 71 are used to provide an opening so that molding resin may be injected into an area underneath the skirt portion 71 and heat spreader 7. However, the through holes 711 do not penetrate an insulating resin and do not have a "connecting means formed inside" them as recited in claim 1 of the present application.

At least for these reasons, claim 1 should be allowed.

Claims 3-5 and 7-8 depend from claim 1 and should be allowed for at least the same reasons.

Claim 6, which depends from claim 1, was rejected as unpatentable over Huang in view of Tachibana (U.S. Patent No. 6,270,607).

Tachibana discloses an external conductive pattern made of a plated film that is electrically connected to a metal plated hole 4a.

Tachibana does not disclose or suggest, individually or in combination with the Huang patent, the features of pending claim 1 or claim 6 and should be allowed for at least the same reasons as claim 1.

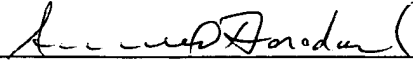
In addition, the dependent claims recite additional features that make these claims independently patentable. For example, new claim 13 of the present application recites the through hole "has a tapered shape which narrows towards the conductive pattern." An example of this feature is disclosed in FIG. 1A and on page 11, lines 19-21. Neither the Huang patent nor the Tachibana patent disclose or suggest a through hole with a tapered shape.

For this additional reason, claim 13 should be allowable.

It is believed all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

Respectfully submitted,

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